What do climate change, respiratory health, and the childhood obesity question have in common?

F.S. Cardwell & S.J. Elliott

IMGS 2015, Simon Fraser University
Presentation Outline

- Context
- Objectives
- Methods
- Preliminary Results
- Next Steps and Implications
Research Context

- Worldwide asthma prevalence increasing
- Most common chronic disease among children worldwide (WHO 2015)
- Most common chronic respiratory disease in Canada (Crighton et al 2012)

- Over 2 million Canadians are diagnosed (Statistics Canada 2013)
- 13% of Canadian children (Asthma Society of Canada 2012)
Research Context

- Complete etiology of asthma unknown
- Urban regions vulnerable to poor outdoor air quality
  - Anticipated future climate change
- Children particularly vulnerable
Research Context

- Allergic disease linked to obesity and overweight
  - Generally less physically active
  - Unique physical, psychological and social challenges

- Increasing rates of obesity and overweight growing public health concerns
  - 11.7% of Canadian children aged 5-17 years obese
  - 19.8% children overweight (Roberts et al 2012)

- Physical activity participation key to reduce future chronic disease burden in Canada
Research Context

- Engaging children in organized team sport to encourage healthy lifestyles
  - Physical, social, mental benefits

- Over half of Canadian children participate in organized sport (Clark 2008)

- ~ 1.8 million Canadians coach youth sport (Clean Air Champions 2011)

- Manage health risks
- Many volunteers with little training in child development, environmental or health issues
Research Context

- Role of coach behaviour in athlete enjoyment, performance and health and wellbeing

- 30% of youth report coach actions as reason for quitting sport (Merkel 2013)

- For athletes with allergic disease, team sport environment presents important setting for management
Research Objectives

1) To explore the perceptions and lived experiences of youth team sport athletes diagnosed with asthma (and their parents),

2) To investigate the perceptions and concerns of youth team sport coaches with respect to asthmatic athletes and asthma management in team sport, and;

3) To understand child and coach-identified coping strategies.
Methods

- Semi-structured in-depth interviews

- Youth team sport users and providers
  - Players (aged 12-18) and their parent(s) (n=11)
  - Coaches of teams aged 18 and under (n=18)
  - Indoor and outdoor sports

- October 2013-August 2014

- Interviews transcribed verbatim; data organized using NVivo for Mac for thematic analysis
Study Region
Preliminary Results

**DATA OVERVIEW**

<table>
<thead>
<tr>
<th>Category</th>
<th>Number (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total interviews</td>
<td>29</td>
</tr>
<tr>
<td>Coach participants</td>
<td>18</td>
</tr>
<tr>
<td>Player participants</td>
<td>11</td>
</tr>
</tbody>
</table>

**PRIMARY SPORT INVOLVEMENT**

- Soccer, n=17
- Hockey, n=4
- Basketball, n=2
- Ringette, n=2
- Baseball, curling, cycling, volleyball, n=1 each
# Preliminary Results

## Coach Overview (n=18)
- 1 recreational, 11 competitive, 6 both
- 11 male, 7 female, 11 with children
- 8 Head Coaches, 4 Assistant Coaches, 6 both
- 3 coach males, 11 coach females, 4 coach both
- 17 with coaching qualifications, 9 with medical qualifications

## Player Overview (n=11)
- 2 recreational, 9 competitive
- 6 male, 5 female
- Born 1995 to 2002
- In addition to asthma, participants affected by allergies: grass (n=4), animals (n=4), ragweed (n=3), peanuts (n=2), treenuts, (n=1), egg (n=1), dairy (n=1)
Preliminary Results: Knowledge - Coaches

- Symptoms: shortness of breath, wheezing, coughing, often related to personal experiences with asthma

- Triggers: exercise, air quality, temperature, seasonal change

- Interaction with asthmatic/allergic athletes

“Poor air quality in terms of straight back court setting, I was wheezing probably alongside the restared as just physical attacks, just just gasping” (Coach 15, Curling)
Preliminary Results:
Knowledge - Players

- Shortness of breath identified by every participant, wheezing, coughing

- Exercise, air quality & temperature

“Player: I don’t honestly know what could trigger asthma for me. It was running really fast, like as quick as I could... For me, I don’t know any other reasons why asthma would be triggered.

Parent: More so in the heat? Not so much in the cold. Right?

Player: Yea. The heat I guess because it is making you sweat more, even though you might just be sitting outside. You could still get asthma due to heat.” (Player 10)
Preliminary Results: Attitudes - Coaches

- Potential for bullying
- Asthma identified as ‘weakness’, doubtful of symptoms
- Players hide symptoms

"I think there is kind of like a culture of, especially with teenagers, making fun of anything, but if a kid pulls out his puffer, so you get the wheezing jokes, and you kind of see him like the way it is depicted in pop culture. The kids with asthma are the nerdy kids who don't play sports, and then obviously not that everyone believes that, but it is an easy thing for teenagers to make jokes about" (Coach 1, Baseball)

"I find that they are cunning in that way and they are hiding out the excuses why. Everybody gives me excuses why they get yellow card, but they never see any excuses when there is game day. So, okay, what gives?" (Coach 2, Soccer)

"I had a little centre who has got more energy than anything but she loses her breath too fast... you know competitive girls... they will never admit it" (Coach 11, Hockey)
Preliminary Results:
Attitudes - Players

- Frustration/disappointment
- Fear of stigma/losing playing time
- Hide symptoms

"Researcher: When you feel like you can't go back on, what does that feel like?

Player: It is kind of disappointing, because I like playing in the game." (Player 11)

"Researcher: Did you experience that kind of thing, if you were suffering that they would put you on the bench?

Parent: Yea and I know that

Player: Yea and I know that

Researcher: That's what I am trying to get at, concussion, heart arrhythmia, knee injuries, what they may be dealing with what they may be able to lead to. They may need the rescue inhaler" (Player 1)
Preliminary Results: Practices

- Players self-manage, use of emergency puffer, water breaks
- Increasing fitness
- No coach or player identified use of personalized Asthma Action Plan

“...they had a puffer on the bench which they used once in awhile” (Coach 18, Hockey)

“My first year [Jen’s] parents said, ‘Oh, she has got asthma’, but through that winter session, we did the running and then at first season that we played they could not believe the difference ... it improved. She didn’t go down in games like the year prior... sometimes [it's a] lack of physical fitness.” (Coach 2, Soccer)
Preliminary Results: Barriers to Participation

- Allergic disease identified as barrier to participation and high performance.
- Players hide symptoms from teammates, others use support network of team.
- Lack of knowledge/need for awareness identified by coaches and athletes.

"I have 3 or 4 of them. Other girls on your team or the teams you've played on in the past have one asthma perhaps as some of the other girls that don't have it." Coach 11.

"I have another girl who had asthma too. I would help her with her breathing. She would help me, just to calm each other down." Player 4.

"Researcher: Are there any other girls on your team or teams you've played on in the past that you've experienced it?"

Player: Yes, there was another girl who had asthma too. I would help her with her breathing. She would help me, just to calm each other down."

"Player: I guess if people were more aware..."

"Parent: Probably just awareness, but I think unless there is probably some campaign that is going to make everybody more aware, because really until you suffer, I don't totally know. I mean you have no idea." (Player 5)
Next Steps and Implications

• Coach and player behaviours could increase risk in already vulnerable population

• Calls for increased awareness of asthma (social dynamics, management)

• Evaluation of Air Aware Coach Education Tool
Acknowledgements